

REMARKS

Reconsideration of this application is respectfully requested.

At the time of the current Office Action (paper number not given), Claims 1-45 were pending. Claims 1-45 stand rejected. No claim has been allowed. Claims 1-45 remain in this application.

In the Office Action, the following matters were raised or actions taken:

(1) Cross-reference to related applications

RESPONSE:

The specification has been amended to include a cross-reference to related applications as requested by the Examiner.

(2) Amendments to specification objected to - alleged failure to provide proper antecedent basis for original claims 1-22

RESPONSE:

The original claims 1-22 are fully supported by the portions of the original specification and drawing that were not amended.

The amendments to the specification and claims were made for the purpose of correcting grammatical and typographical errors and to more consistently refer to the terminal balls as "terminal balls" rather than "ball terminals"

Note that the embodiment of Fig. 1A shows each terminal ball depending into an individual window 23 in the surface 24 of the support plate. The embodiment of

Figs 2, 3, 6 and 7 shows one large window 23 into which all the terminal balls depend. Both arrangements where the terminal balls depend into a single window (as shown in Figs 2, 3, 6 and 7) or individual windows (as shown in Fig. 1A) are comprehended by the invention. As shown by Figs. 2, 3, 6 and 7 the invention contemplates sockets having a window 23 in the support surface 24 into which two or more terminal balls depend.

Reissue claim 23 is essentially identical to issued claim 1 except that the support face of the support member has been defined in terms of structure as well as function. Likewise, reissue claims 24-31 (variously dependent from claim 23) are essentially identical to issued claims 2-9 (dependent from claim 1) except for the amendments to the base claim and the formal corrections discussed above.

Reissue claim 32 is essentially identical to issued claim 10 except that the support face of the support member has been defined in terms of structure as well as function. Likewise, reissue claims 33 and 34 (dependent from claim 32) are essentially identical to issued claims 11 and 12 (dependent from claim 10) except for the amendments to the base claim and the formal corrections discussed above.

Reissue claim 35 is essentially identical to issued claim 13 except that the support face of the support member has been defined in terms of structure as well as function. Likewise, proposed claims 36-42 (all variously dependent from claim 35) are essentially identical to issued claims 14-20 (dependent from claim 13) except for the amendments to the base claim and the formal corrections discussed above.

Reissue claim 43 is essentially identical to issued claim 21 (as amended) except that the support face of the support member has been defined in terms of structure

as well as function.

Reissue claim 44 is essentially identical to issued Claim 22 (as amended) except that the support face of the support member has been defined in terms of structure as well as function.

Reissue claim 45 presents the unique contact structure in Jepson form with the entire structure of the mounting apparatus except the contact finger set forth in the preamble since the essence of the invention defined in claim 45 resides in structure which contacts the terminal ball above its centerline.

The invention comprehends both embodiments where each terminal ball projects into an individual window or two or more terminal balls project into a single window. The support face need only support one face of the ball grid array device with its terminal balls depending downwardly into the support member to be contacted by the free ends of the contact members. The particular physical configuration of the window or windows defined by the support face is not critical to the practice of the invention. Thus claim coverage limited to use of the invention in connection with a support member that has a support face defining a plurality of windows unduly and unnecessarily deprives the patentee of the full scope of patent protection to which he is entitled for the invention disclosed.

The limitations regarding the specific window configuration of the support face which appears in issued Claims 1-22 and which Reissue Applicant seeks to correct by addition of proposed Claims 23-45 appears in the claims originally filed in the application which matured into United States Letters Patent No. 5,611,705. Claims 1-22

of the original patent grant, except for minor changes, appear as reissue Claims 1-22, respectively.

The Examiner's attention is directed to Fig. 3 and Fig. 7. In both of those views, a socket embodiment is illustrated in which a single window 23 receives a plurality of terminal balls 12 that are engaged by end portions 42 of contact fingers 40. These drawing figures clearly show a plurality of terminal balls 12 depending into a single window 23.

The text of the specification in column 5, lines 32-38 supports the single window/multiple terminal ball embodiment:

"Thus, rotation of a cam 50 (counterclockwise as shown in FIG. 2) cams bending plate 28 in the same direction (to the left as shown in Fig. 2). Movement of bending plate 22 thus forces the free end portions 42 in the same direction, withdrawing them from recesses 23a and causing them to laterally traverse *the window 23.*" (italics added)

Further support is found in column 5, lines 8-11, where a single window is disclosed:

"The extreme end 42A, however, is bent or curved to deviate from the central axis and extends into the window 23 toward the support surface 24, but does not extend through *the window 23* or surface 24." (italics added)

Accordingly, there is abundant disclosure in the original specification and drawing figures to support the claimed socket structure in which two or more terminal balls 12 are received in a single window 23.

The various objections and rejections applied by the Examiner are based on an erroneous assumption that only multiple windows (each receiving only one terminal ball) are disclosed, implying incorrectly that a single window receiving two or more

terminal balls is not disclosed. However, as discussed above, Fig. 3 and Fig. 7 clearly disclose a plurality of terminal balls depending into a single window 23. The single window/multiple terminal ball embodiment is also described in the original specification (see col. 5, lines 32-38).

(3) Amendments objected to as allegedly introducing new matter - 35 U.S.C. 132

RESPONSE:

The Examiner characterizes the amendments filed with the reissue application as constituting new matter. The Examiner asserts that the new matter is

"A socket with a window for receiving and retaining a plurality of terminal balls of a BGA device, in which free end portions of contact fingers extend into a window."

As discussed above, the single window arrangement is illustrated in Fig. 3 and Fig. 7 which clearly show a plurality of terminal balls depending into a single window 23. The single window arrangement is also described in the original text (see col. 5, lines 32-38). Note also the arrangement shown in Fig. 6, which is identified as an alternative embodiment, also shows a single window arrangement in which the free end portions 42 of contact fingers 40 extend into *a single window* 23. The amended specification as well as the original specification and drawing support the original claims and the amended claims presented in the reissue application, fully within the scope of the invention as originally disclosed.

(4) Claims 23-45 rejected - alleged broadening outside of two-year period -
35 U.S.C. 251

RESPONSE:

U.S. Patent 5,611,705, issued March 18, 1997. The reissue application was filed October 5, 1998, well within the statutory period. The scope of the invention as defined by the amended specification and claims is identical to the scope of the invention defined by the original specification and claims as well as the original reissue application. Thus there is no basis for the broadening reissue rejection.

(5) Rejection of claims 23-45 under 35 U.S.C. 112, first paragraph

RESPONSE:

To satisfy the requirements of the first paragraph of 35 U.S.C. § 112, the invention must be described in "such full, clear, concise, and exact terms" as to enable any person skilled in the art to which it pertains to make and use the same. Applicant's specification clearly discloses a structure in which each terminal ball may depend into one of a plurality of windows. Likewise, Applicant's specification and drawings clearly disclose a socket structure wherein two or more terminal balls depend into a single window. Nothing in the specification limits the invention to a single one of the disclosed embodiments.

During examination of the original application, a determination was made by the PTO that all requirements of 35 U.S.C. § 112 were fully satisfied by the multiple window embodiment. Any person having the benefit of Applicant's disclosure and

possessing ordinary skill in the art at the time the invention was made would instantly recognize how to make and use the single window embodiment, as exemplified by the single window/multiple ball arrangement shown in Fig. 3, Fig. 6 and Fig. 7. All specifications needed for making and using the single window/multiple ball embodiment are provided in connection with the multiple window embodiment.

The Examiner also asserts in connection with the 35 U.S.C. § 112, first paragraph rejection that the subject matter of claims 23-45 introduce new matter that is not supported in the specification and drawings. Applicant has already addressed the new matter rejection in connection with the 35 U.S.C. § 132 rejection.

The original reissue claims 23-24 are broad enough to cover structures in which more than one terminal ball may depend into a single window. Since Fig. 3 and Fig. 7 clearly show a plurality of terminal balls 12 depending into a single window 23, there can be no doubt that the inventor had possession of the invention claimed at the time the original application was filed. The single window/multiple terminal ball arrangement defined by the reissue claims 23-45 was fully disclosed in the original specification and drawing figures and could have been claimed at the time of filing of the original application, and thus is proper subject matter for the pending reissue claims.

(6) Rejection of claims 25, 30, 33, 38 - under 35 U.S.C. 112, second paragraph

RESPONSE:

These claims have been amended per MPEP 1453 to correct the informalities as noted by the Examiner. The wording that has been changed in claims 25,

30, 33 and 38 is shown by underlining and brackets below:

25. Apparatus as defined in Claim 24 wherein the support member is intersected by a window and each [said] extreme end portion extends into [a window in the support member] the window but does not extend through [said] the window.

30. Apparatus as defined in Claim 25 wherein the support member is intersected by a window and the extreme end of said free end portion of each [of said contact members] contact member extends into the window [in said support member] a sufficient distance to contact a terminal ball positioned in [said] the window between the center of the terminal ball and the face of the device from which such terminal ball depends.

33. Apparatus as defined in Claim 32 wherein [each said] the support member is intersected by a window and each extreme end portion extends into [a window in the support member] the window but does not extend through [said] the window.

38. The combination defined in Claim 35 wherein the support member is intersected by a window, and further including means for moving said free end portions with respect to [said] the window.

(7) Rejection of claims 1-45 under 35 U.S.C. 112, second paragraph

RESPONSE:

The Examiner concludes that there is "inconsistent terminology between the reissue claims 23-45 and the original claims 1-22. The Examiner notes in particular that the original claims are directed to an embodiment in which a plurality of windows receive a plurality of terminal balls of a BGA device, while the reissue claims are directed to an embodiment in which a single window receives a plurality of terminal balls. Applicant respectfully submits that there is absolutely no inconsistency whatsoever with respect to the claimed invention. There is simply a first embodiment (the single window/multiple ball arrangement) and a second embodiment (the multiple window arrangement) of a single disclosed invention. 35 U.S.C. § 112, second paragraph specifically permits claiming of alternative embodiments of a single invention.

Applicant respectfully traverses the Examiner's assertion that the amended reissue application would change the definition of the word "window." The Examiner provides his own definition of a window as being "a large common area into which free end portions 42 of contact fingers 40 extend into." If the Examiner's definition is to be accepted, then that same definition is consistent with the description given by Applicant's original specification in column 5, lines 32-38 in which plural free end portions 42 of the contact fingers 40 extend into and laterally traverse "*the window 23*." Whether a window constitutes a large common area or a small common area is irrelevant. The sole criteria for the reissue claims 23-45 is that two or more terminal balls extend into a common window, as shown in Applicant's drawing Fig. 2, Fig. 3 and Fig. 7. There is no

contradiction whatsoever between the original patent claims and the new reissue claims;
both are alternative embodiments of the same invention.

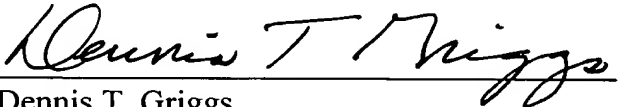
Conclusion

Applicant respectfully requests reconsideration and allowance of claims 1-45 in view of the amendments and remarks set forth above. A Notice of Allowance is respectfully requested.

If there are any matters concerning this response that may be cleared up by telephone, please call Applicant's attorney at (972) 447-4569.

Respectfully submitted,

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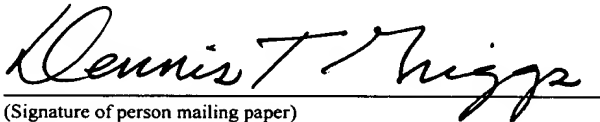
CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this AMENDMENT AND RESPONSE TO FIRST OFFICE ACTION(along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: BOX AMENDMENTS - FEE, Commissioner for Patents, Washington, D.C. 20231.

Dennis T. Griggs

(Typed name of person mailing paper)

Date: January 28, 2002


(Signature of person mailing paper)